Patent Claims

1. A hingeless rotor, comprising a rotor mast (2), a torque-transmission element (4) arranged rotationally fixed with respect to the rotor mast (2) and at least one plate-shaped rotor head element (6) through which the axis of rotation (A) of the rotor passes and which has two different groups of arms (8, 10; 8, 14), the first group of which has bending-flexible rotor blade-connection arms (8) that dissipate centrifugal forces and to each of which a rotor blade can be connected, and the second group of which has bending-flexible rotor mast-connection arms (10; 14) that are free of centrifugal force and to which the plate-shaped rotor head element (6) is connected via the torque-transmission element (4) arranged rotationally fixed with respect to the rotor mast (2).

2. The rotor according to Claim 1, characterized in that the different groups of arms (8, 10; 8, 14) are an integral part of the plate-shaped rotor head element (6).

3. The rotor according to one or more of the preceding claims, characterized in that the rotor blade-connection arms (8) are arranged offset with respect to the rotor mast-connection arms (10) by an angle (α).

4. The rotor according to one or more of the preceding claims, characterized in that the rotor mast-connection arms (10) lie in the plane of the rotor blade.

5. The rotor according to one or more of the preceding claims, characterized in that the rotor blade-connection arms (8) each have at least one slit and notched arm area (14) that is angled upwards or downwards in the direction of the rotor axis (A) from the plate plane, said arm areas (14) each forming a rotor-mast connection arm (14) and a loop-like horizontal projection of the appertaining rotor blade-connection arm (8).

6. The rotor according to one or more of the preceding claims, characterized in that, for each rotor blade-connection arm (8), two rotor mast-connection arms (10) are provided which,

relative to the direction of the rotor axis (A), extend above and below each rotor blade-connection arm (8).

7. The rotor according to one or more of the preceding claims, characterized in that the rotor blade-connection arms (8) and the rotor mast-connection arms (10; 14) each extend in the same radial directions in different planes relative to the plane of the rotor circle.

8. The rotor according to one or more of the preceding claims, characterized in that the rotor blade-connection arms and the rotor mast-connection arms each extend in different radial directions in different planes relative to the plane of the rotor circle.

9. The rotor according to one or more of the preceding claims, characterized in that, on its radial outer free end, each rotor mast-connection arm (10, 14) has a separation point for detachably fastening a rotor blade.

10. The rotor according to one or more of the preceding claims, characterized in that each rotor blade-connection arm (8) is an integral part of a rotor blade.

11. The rotor according to one or more of the preceding claims, characterized in that the rotor blade-connection arms (8) and the rotor mast connection-arms (14) are each an integral part of at least two separate plate parts which are combined to form the plate-shaped rotor head element (6).

12. The rotor according to one or more of the preceding claims, characterized in that the plate-shaped rotor head element (6) has a central opening (12) through which the rotor mast (2) or part of it extends connection-free.

13. A rotary-wing aircraft, especially a helicopter, particularly a tilt rotor helicopter, comprising at least one rotor according to one or more of Claims 1 to 12.